



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,822	02/27/2004	Katsuhiko Nishiwaki	P/1689-135	8236
2352 7590 01/22/2008 OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			EXAMINER KRASNIC, BERNARD	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 01/22/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/789,822	Applicant(s) NISHIWAKI ET AL.	
	Examiner Bernard Krasnic	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. The amendment filed 11/08/2007 have been entered and made of record.

2. The application has pending claim(s) 1-3.

3. In response to the amendments filed on 11/08/2007:

The "Objections to the specification and abstract" have been entered and therefore the Examiner withdraws the objections to the specification and abstract.

The "Objections to the claims" have been entered and therefore the Examiner withdraws the objections to the claims.

4. Applicant's arguments filed 11/08/2007 have been fully considered but they are not persuasive.

The Applicant alleges, "Van Asma is directed to a plurality ..." in page 8 and "Accordingly, the Examiner cites to Gonzalez for teaching ..." in page 8, and states respectively that the prior art references Van Asma and Gonzalez in combination or alone do not teach the claimed limitation of providing G-R/B image data of a compressed data volume by elimination of an R component and a B component with regard to every other pixel in a main scanning direction of the image but rather, Van Asma teaches upscaling and downscaling and Gonzalez teaches data compression as a function of pixel skipping. The Examiner disagrees because Van Asma teaches the

claimed limitation of compressing / downscaling the generated RGB image data / digital RGB color to G-R/B image data / downscaled image of a compressed data volume / downscaled image and Gonzalez teaches that the compressed data volume / downscaled image is achieved by elimination of an R component and a B component with regard to every other pixel / essentially pixel skipping [the compression is a downscaling by deleting every other row and column among each R, G, and B components included in the RGB image data, the broadest reasonable claim language interpretation never specifies that the elimination of every other pixel is only for the R and B component] in a main scanning direction of the image. Van Asma also teaches upscaling by interpolating the downscaled image to produce the same sized image with every component of the image filled with some type of pixel value. Therefore Van Asma in view of Gonzalez does teach compressing the generated RGB image data to G-R/B image data of a compressed data volume by elimination of an R component and a B component. Therefore the claim rejection toward claim 1 is maintained. Similarly, the claim rejection toward claim 3 is also maintained.

The Applicant alleges, "Applicant's claim 2, which depends directly from claim 1, further ..." in pages 8-9, and states respectively that the prior art reference Garlick does not provide the features of the data bus having a width that is $(3+n)$ th power of 2 bits. However the Examiner disagrees because Garlick teaches that the data size of memory of the downscaled data is 16bits and $2^{(3+1)} = 16bits$ clearly shows that the data bus width is $(3+n)$ th power of 2bits where $n=1$. Therefore the claim rejection toward claim 2 is maintained.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Asma (US 6,897,902 B1, as applied in previous Office Action) in view of Gonzalez ("Digital Image Processing" - Second Edition – 2002 – pages 57-59 and 64-66, as applied in previous Office Action).

Re Claim 1: Van Asma discloses a presentation supporting system that inputs an image signal / analog RGB to digital RGB signal, processes / downscales and upscales the input image signal, and outputs the processed image signal to a display device / projection display, the presentation supporting system comprising: a shooting device / video recorder that takes a color image / RGB (see col. 1, lines 24-45, col. 2, lines 14-15, col. 3, lines 60-61 and 66-67, col. 4, lines 3-4 and 12-14, some type of video recorder creates the video data); a data input generation module (101) that inputs the color image taken by the shooting device as analog data and converts / A/D converter the input analog data into digital data expressed in an RGB color space to generate RGB image data / digital RGB color (see Fig. 1, col. 1, lines 24-45, col. 2, lines 14-15, col. 3, lines 60-61 and 66-67, col. 4, lines 3-4 and 12-14); a data processing module (104) that compresses / downscales the generated RGB image data to G-R/B image

data / downscaled image (see Fig. 1, col. 1, lines 24-45, col. 2, lines 14-15, col. 3, lines 60-61 and 66-67, col. 4, lines 3-4 and 12-14); a storage module (105) that has a data bus / buffer of a predetermined bus width and that temporarily stores the compressed G-R/B image data / downscaled image via the data bus (see Fig. 1, col. 1, lines 24-45, col. 2, lines 14-15, col. 3, lines 60-61 and 66-67, col. 4, lines 3-4 and 12-14); a data conversion module (108) that reads G-R/B image data / downscaled image from the storage module and interpolates / upscales through interpolation (see Fig. 1, col. 1, lines 24-45, col. 2, lines 14-15, col. 3, lines 60-61 and 66-67, col. 4, lines 3-4 and 12-14); and a data output module (111) that outputs the reproduced RGB image data to the display device / projection display (see Fig. 1, col. 1, lines 24-45, col. 2, lines 14-15, col. 3, lines 60-61 and 66-67, col. 4, lines 3-4 and 12-14).

However, Van Asma fails to specifically disclose compressing the generated RGB image data to G-R/B image data of a compressed data volume by elimination of an R component and B component among R, G, and B components included in the RGB image data of each pixel, with regard to every other pixel in a main scanning direction of the image; reads the G-R/B image data and interpolates the eliminated R component and B component, so as to convert the G-R/B image data into reproduced RGB image data including all the R, G, and B components with regard to each pixel.

Gonzalez discloses compressing the generated RGB image data / 1024x1024 image (although the 1024x1024 image is a gray level image, Van Asma teaches the RGB image and Gonzalez teaches this compression is typical for any color space) to G-R/B image data / 512x512 image of a compressed data volume / 512x512 by

elimination of an R component and B component / delete every other row and column among R, G, and B components included in the RGB image data of each pixel, with regard to every other pixel in a main scanning direction of the image (see pages 57-58, Section 2.4.3, paragraph "Figure 2.19 shows an image of size ...", the compression is a subsampling or downscaling by deleting every other row and column in every component of the image); reads the G-R/B image data / 512x512 image and interpolates / nearest neighbor interpolation the eliminated R component and B component, so as to convert the G-R/B image data / 512x512 image into reproduced RGB image data / 1024x1024 image including all the R, G, and B components with regard to each pixel (see pages 64-66, Section 2.4.5, the subsampled or downsampled image is upsampled by interpolation to produce the same sized image with every component of the image filled with some type of pixel values).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Van Asma's system by using Gonzalez's teachings by including the deletion of every other row and column of each color component for the compression scheme in order to provide the concept of how subsampling or downscaling is accomplished (see pages 57-58, Section 2.4.3, paragraph "Figure 2.19 shows an image of size ...").

As to claim 3, the claim is the corresponding method claim to claim 1 respectively. The discussions are addressed with regard to claim 1.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Asma as modified by Gonzalez as applied to claim 1, and further in view of Garlick et al (US 6,614,448 B1, as applied in previous Office Action). The teachings of Van Asma as modified by Gonzalez have been discussed above.

Re Claim 2: Van Asma as modified by Gonzalez further discloses each of the R, G, and B components / per color included in the RGB image data / RGB image and in the G-R/B image data / downscaled RGB per color with regard to each pixel is expressed as 8-bit data / 8-bits per color (see Van Asma, col. 1, lines 24-45, col. 2, lines 14-15, col. 3, lines 60-61 and 66-67, col. 4, lines 3-4 and 12-14).

However Van Asma as modified by Gonzalez fail to specifically disclose the predetermined bus width is $(3+n)$ -th power of 2 bits, where n is an integer of not less than 1, the G-R/B image data is 16-bit image data in a minimum read-write unit, and the data conversion module receives and transmits the 16-bit image data in units of $(n-1)$ -th power of 2 from and to the storage module via the data bus of the predetermined bus width.

Garlick discloses the predetermined bus width is $(3+n)$ -th power of 2 bits, where n is an integer of not less than 1, the G-R/B image data is 16-bit image data in a minimum read-write unit, and the data conversion module receives and transmits the 16-bit image data in units of $(n-1)$ -th power of 2 from and to said storage module via the data bus of the predetermined bus width (see Garlick, col. 1, lines 56-67, col. 2, lines 1-2 and 10, depending on the resolution, the data size could vary from source data 24 bits [8 bits for each color component] to downscaled data 16 bits [red and blue 5 bits each

and green 6 bits] and as a result the memory receives and transmits dependent upon the pixel memory size).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Van Asma, as modified by Gonzalez, using Garlick's teachings by including the 16 bit memory size to the compressed or downsampled resolution image in order to efficiently represent the color resolutions with the minimum amount of memory needed (see Garlick, col. 1, lines 56-67, col. 2, lines 1-22).

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Application/Control Number:
10/789,822
Art Unit: 2624

Page 9

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Krasnic whose telephone number is (571) 270-1357. The examiner can normally be reached on Mon-Thur 8:00am-4:00pm and every other Friday 8:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bernard Krasnic
January 16, 2008


JINGGE WU
SUPERVISORY PATENT EXAMINER